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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,854	08/25/2006	Tadayuki Isaji	0171-1300PUS1	4134

2292 7590 05/10/2011
BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER

PAK, HANNAH J

ART UNIT	PAPER NUMBER
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1764

NOTIFICATION DATE	DELIVERY MODE
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05/10/2011

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/590,854

Applicant(s)

ISAJI ET AL.

Examiner

Hannah Pak

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 03/16/2010.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 01/07/2010 has been entered.

Response to Amendment

2. The applicants amended claim 1 to include limitations that are supported by page 12, lines 26-28, and page 4, lines 18-20, of the specification as originally filed. The applicants also added new claims 13 and 14 that are supported by page 4, lines 10-15, of the specification as originally filed. Thus, no new matter is present.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2 and 4-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jonas et al. (US 2002/0173579) in view of either Babinee et al. (US 6,203,727) or Fries et al. (US 2003/0196962).

Jonas et al. disclose a process for preparing dispersions or solution containing polythiophene⁺An⁻ion, which according to page 4, lines 10-15, of the specification corresponds to the claimed intrinsically conductive polymer, in organic solvents that are useful for among other things, electrically conductive coatings on plastic films and light-emitting diodes (Paragraph [0015]). The process taught by Jonas et al. involves the steps of 1) adding a water-miscible organic solvent or a water-miscible solvent mixture to an aqueous dispersion or solution of polythiophene⁺An⁻ion complexes (Paragraphs [0016] and [0028]), 2) removing all or some of water (Paragraph [0034] and see also [abstract]) such that the water content in the dispersion or solution preferably ranges from 0-5% by weight (Paragraph [0081]), which overlaps with the claimed water content range of less than 1%, and 4) if desired, diluting the resultant dispersion or solution with organic solvents (Paragraphs [0036], [0079], and see also [abstract]) (Paragraph [0080]) such that a solids content of, for example, 1.2% by weight is present (Paragraph [0092]), i.e. encompassed by the claimed solids content range of 0.05-10.0 wt.%. Suitable solvents used in the process mentioned above include N-methylpyrrolidone, alcohols and ethers (Paragraph [0074]) as required by claims 7 and 12.

Although Jonas et al. do disclose using anion or cation exchangers to form the desired dispersion or solution of polythiophenes (Paragraph [0091]), they do not

specifically mention such ion exchange (deionizing) which is carried out with a column filled with an ion exchange resin.

Nevertheless, Babinee et al. teach it was known at the time of the invention to employ ion exchange in the form of a column filled strong acid cation exchange resin to treat a solution containing doped polyaniline or polythiophene (Col. 11, lines 30-38 and Col. 2, lines 55-60).

Moreover, Fries et al., alternatively, disclose an ion exchange resin column is useful for purifying a solution (Paragraph [0029]).

Given the above teachings, it would have been obvious to one of ordinary skill in the art to employ the claimed column filled with an ion exchange taught by either Babinee et al. or Fries et al., in the ion exchange (deionizing) step of Jonas et al.'s process for preparing dispersion or solution containing polyanilines or polythiophenes in organic solvents, with a reasonable expectation of successfully removing undesired impurities in the dispersion or solution.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jonas et al. (US 2002/0173579) in view of either Babinee et al. (US 6,203,727) or Fries et al. (US 2003/0196962) as applied to claims 1-2 and 4-14 above and further in view of Kelley et al. (2003/0065090).

The disclosures with respect to Jonas et al., Babinee et al. and Fries et al. in paragraph 3 are incorporated here by reference. They do not specifically mention the claimed ultrafiltration step.

However, Kelly et al. disclose using known purification techniques for removing ions, such as ultrafiltration, in a process for forming polyaniline coating composition useful for conductive coatings (Paragraphs [0028] and [0002]).

Given the above teachings, it would have been obvious to one of ordinary skill in the art to employ the ultrafiltration step taught by Kelly et al. in the process for preparing dispersion or solution containing polyaniline or polythiophene suggested by Babinee and Fries, motivated by a reasonable expectation of successfully removing impurities (purifying) in the dispersion or solution.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 1 and 5-14 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 7, 8, 9, and 11-13 of copending Application No. 12/376,941, hereinafter referred to as "U.S. Appl. '941" (corresponding to US 2010/0038596) in view of either Babinee et al. (US 6,203,727) or Fries et al. (US 2003/0196962). Although the conflicting claims are not identical, they are not patentably distinct from each other.

Both the instant application and the U.S. Appl. '941 claim a method for producing an organic solvent dispersion of an intrinsically conductive polymer including doped polyaniline and polythiophene. The method claimed by the instant application and the U.S. Appl. '941 comprises the steps of deionizing step of deionizing an aqueous colloidal dispersion of an intrinsically conductive polymer by the passing of liquid, thereby clearing the intrinsically conductive polymer of cations adhering thereto and a solvent substitution step of substituting water in the aqueous colloidal dispersion with an organic solvent such that the water content is reduced to below 1%.

The U.S. Appl. '941 does not specifically claim such ion exchange (deionizing) which is carried out with a column filled with an ion exchange resin as required by claim 1 of the instant application.

However, Babinee et al. teach it was known at the time of the invention to employ ion exchange in the form of a column filled strong acid cation exchange resin to treat a solution containing doped polyaniline or polythiophene (Col. 11, lines 30-38 and Col. 2, lines 55-60).

Moreover, Fries et al., alternatively, disclose an ion exchange resin column is useful for purifying a solution (Paragraph [0029]).

Given the above teachings, it would have been obvious to one of ordinary skill in the art to employ the claimed column filled with an ion exchange taught by either Babinee et al. or Fries et al., in the ion exchange (deionizing) step of the U.S. Appl. '914's process for preparing dispersion or solution containing polyanilines or polythiophenes in organic solvents, with a reasonable expectation of successfully removing undesired impurities in the dispersion or solution.

Moreover, although the U.S. Appl. '941 contains an additional method step, the term "comprising" recited in claim 1 of the instant application does not exclude the additional step recited in claim 1 of the U.S. Appl. '941.

This is a provisional obviousness-type double patenting rejection.

Response to Arguments

6. The applicants' arguments filed 01/07/2010 are fully considered but are not found for the following reasons set forth below:

(A)

Applicants' Argument: The applicants argue that Jonas does not teach the claimed specific deionizing step carried out by passing a column filled with an ion exchange resin (see Pages 5-6 of the Applicants' Remarks).

Examiner's Response: This argument is addressed in the new ground of rejection set forth above.

(B)

Applicants' Argument: The applicants contend that the examples of Jonas do not teach a dispersion containing polythiophene having the claimed water content of less than 1% (see Page 7 of the Applicant's Remarks).

Examiner's Response: However, this contention is not well taken since Jonas is not limited by their examples. Although Jonas's examples teach certain dispersion containing polythiophenes having a water content above 1% by weight, Jonas also teaches a dispersion containing polythiophenes having a water content of 0-5% by weight. Moreover, Jonas teaches replacing all or some water in the dispersion with an organic solvent. Thus, Jonas as a whole would have suggested a dispersion containing polythiophene having the claimed water content of less than 1%.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hannah Pak whose telephone number is (571)270-5456. The examiner can normally be reached on Monday - alternating Fridays (7:30 am - 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1764

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Hannah Pak
Examiner
Art Unit 1764

/HP/

/Vasu Jagannathan/
Supervisory Patent Examiner, Art Unit 1764